

BOOK REVIEWS

PERILS OF A RESTLESS PLANET: SCIENTIFIC PERSPECTIVES ON NATURAL DISASTERS by E. Zebrowski Jr, Cambridge University Press, Cambridge, 1997. No. of pages: xi+306. Price: £16.95 (hb). ISBN 0-521-57374-2

This book offers ‘perspectives on a selection of historical natural disasters, the scientific progress that has been made in understanding them, the scientific challenges that remain...’. On the face of it, this is another book on disasters combining anecdote and science. However, closer inspection reveals quite an individual and entertaining account.

The text begins with a sketch of the events and consequences of the great Lisbon earthquake of 1755 and the Minoan eruption of Thera (Santorini), neatly linking the two through the tsunamis they generated, then embarks on a wide-ranging and personal review of the philosophy of science, alighting ultimately on Popper. Chapter 3 examines the forces of relevance to the structural engineering of arches and triangles, beams and walls, and refers back to the seismic destruction of Lisbon, illustrative of Zebrowski’s knack of interweaving themes through the book.

The following chapter poses some questions: Are we living on the brink of overpopulation? Will a global pandemic wipe us out? Will cockroaches inherit the Earth? Zebrowski tackles these questions via some thoughts on global population statistics, genetics and natural selection, and by recounting the fate that befell the original inhabitants of Easter Island. His conclusion is ‘maybe’ and he drives home the point that the growth of the human population, and its increased vulnerability though clustering in cities and through migration, raise the risks of future natural disasters.

Chapters 5–7 deal with geophysical hazards including tsunami, earthquakes and volcanic eruptions. The section on volcanism reviews the double volcanic catastrophe in the West Indies in 1902. Both Mont Pelée volcano on Martinique and Soufrière volcano on St Vincent produced devastating pyroclastic flows within

one day of each other in May of that year. Zebrowski speculates that had there been only one volcano rather than two present, the single eruption would have been much larger – a suggestion that would probably raise a few volcanologists’ eyebrows. We learn also of the massive 19th century eruptions of Krakatau and Tambora and then move on to consider the risk of bolide impacts, focusing on the Tunguska event and the links between impacts and extinctions in the fossil record.

Chapter 8 takes a look at severe weather, beginning with an outline of the destruction caused by Hurricane Andrew in 1992. Zebrowski explains how storm surges develop, and the structural measures that can be employed to mitigate the effects of severe winds on buildings. The final chapter opens on the topics of non-linear dynamics, entropy, chaos theory and fractals, to demonstrate the problems and possibilities of understanding the patterns in natural phenomena. Zebrowski wraps up by calling for a ‘new science’ to ‘transcend and merge most of our current (and artificially designated) scientific disciplines and subdisciplines’ that will describe ‘those natural phenomena that are intrinsically irreproducible’. He also argues for the protection of spending on curiosity-driven, basic science.

Zebrowski’s prose is easy-going and conversational in style. The text is both engaging and entertaining, widening the potential readership to, for example, new undergraduate students in the environmental sciences. The scientific perspectives alluded to in the title range from underlying physical principles, to monitoring and prediction techniques, and to some more practical aspects of hazard mitigation. The selections and interpretations are personal but broad in scope. Don’t expect, however, any profound, original perspectives on understanding of natural disasters: this book is first and foremost a compilation of historical anecdotes, and a cherry-picking romp through the history and philosophy of science.

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